

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: July X, 2017

Region: Wilmington Regional Office
County: New Hanover
NC Facility ID: 6500303
Inspector's Name: Mark Hedrick
Date of Last Inspection: 02/23/2017
Compliance Code: 3 / Compliance - inspection

<p align="center">Facility Data</p> <p>Applicant (Facility's Name): Fortron Industries LLC</p> <p>Facility Address: Fortron Industries LLC 4600 Highway 421 North Wilmington, NC 28402</p> <p>SIC: 2821 / Plastics Materials And Resins NAICS: 325211 / Plastics Material and Resin Manufacturing</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>			<p align="center">Permit Applicability (this application only)</p> <p>SIP: 02D .0503, .0515, .0516, .0521, .1806 NSPS: Subpart Dc NESHAP: Subparts FFFF, ZZZZ and DDDDD PSD: N/A PSD Avoidance: N/A NC Toxics: 02D .1100 112(r): N/A Other: Removed 02D .0958</p> <p><i>All applicable regulations noted above applied to the facility prior to the modification.</i></p>																																																				
<p align="center">Contact Data</p> <table border="1"> <tr> <td> <p align="center">Facility Contact</p> <p>Lisa Gideon Environmental & Compliance Manager (910) 343-5031 PO Box 327 Wilmington, NC 28401+0327</p> </td> <td> <p align="center">Authorized Contact</p> <p>Luis Mendoza Site Manager (910) 343-5011 PO Box 327 Wilmington, NC 28401+0327</p> </td> <td> <p align="center">Technical Contact</p> <p>Lisa Gideon Environmental & Compliance Manager (910) 343-5031 PO Box 327 Wilmington, NC 28401+0327</p> </td> </tr> </table>			<p align="center">Facility Contact</p> <p>Lisa Gideon Environmental & Compliance Manager (910) 343-5031 PO Box 327 Wilmington, NC 28401+0327</p>	<p align="center">Authorized Contact</p> <p>Luis Mendoza Site Manager (910) 343-5011 PO Box 327 Wilmington, NC 28401+0327</p>	<p align="center">Technical Contact</p> <p>Lisa Gideon Environmental & Compliance Manager (910) 343-5031 PO Box 327 Wilmington, NC 28401+0327</p>	<p align="center">Application Data</p> <p>Application Number: 6500303.14A, 14C, 17A Date Received: 03/29/2017 Application Type: Modification Application Schedule: TV-Sign-501(c)(2) Part II</p> <p align="center">Existing Permit Data</p> <p>Existing Permit Number: 07323/T20 Existing Permit Issue Date: 04/22/2015 Existing Permit Expiration Date: 08/31/2018</p>																																																	
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<p>Review Engineer: Jenny Kelvington</p> <p>Review Engineer's Signature: _____ Date: _____</p>				<p align="center">Comments / Recommendations:</p> <p>Issue 07323/T21 Permit Issue Date: _____ Permit Expiration Date: June 30, 2022</p>																																																			

I. Purpose of Application

Fortron Industries, LLC (Fortron) operates a polyphenylene sulfide (PPS) production facility in New Hanover County near Wilmington, North Carolina. PPS is formed by the reaction of sodium hydrosulfide (NaSH) with para-dichlorobenzene (pDCB). PPS is a high strength; broad temperature range organic polymer used in electronics and automotive, aerospace and filtration products.

This permit action is the second step of a two-step process allowed under 15A NCAC 02Q .0501(c)(2). Fortron currently holds Title V Permit No. 07323T120, with an expiration date of August 31, 2018. The permit was issued on April 22, 2015 as the first step of a two-part significant modification to allow the expansion of the PPS production process and the addition of two boilers and a process heater as requested in Application Nos. 6500606.14A and 6500606.14C. As a condition of the permit, Fortron was required to file a Title V Air Quality Permit Application pursuant to 15A NCAC 2Q .0504 on or before 12 months after commencing operation of a new or modified source. The first emission source commenced operation on March 30, 2016. On March 29, 2017, Fortron submitted Application No. 6500303.17A as the second step of a two-step significant permit modification for the expansion of the PPS production process and the addition of two boilers and a process heater in accordance with General Condition NN.1.

Most of the project modifications had been completed with the exception of the two boilers.

ID No.	Description	Status
TA-161R1	15,000-gallon HCl storage tank	Completed
RE-2221	Polymerization reactor connected to the continuous flash separator (VE-2281)	Operating beginning 8/25/2016
VE-2082	Therminol storage tank	Status Not Provided
VE-2241	Wet polymerization storage tank D	Operating beginning 8/25/2016
VE-2733	Sour brine tank	Completed
ITA-2736	Brine filtrate tank (Insignificant activity)	Completed
TA-2501	Spent acetone solvent storage (68,000 gallons)	Completed
VE-2744	Filter press core blow tank	Completed
DR-431R1	Salt dryer (5,000 lb/hr NaCl throughput)	Completed
VE-431R1	Salt dissolving tank	Completed
MA-2741	Salt Press	Began operating March-April 2017
ITA-172	23,000-gallon NaOH storage tank	Completed
FU-2081	Duel fuel-fired (natural gas and backup No. 2 fuel oil) No. 2 hot oil process heater (55.0 million Btu per hour heat input) with low NOX burners.	Operating beginning 11/9/2016
BLR-1 and BLR-2	Two boilers (ID Nos. BLR-1 and BLR-2) with low-NOX burners firing natural gas (90.6 million Btu per hour maximum heat input) and No. 2 fuel oil as backup (87.1 million Btu per hour maximum heat input).	Not Installed
MA-741R1	Salt press (formerly IMA-741-R1)	Completed

The application identifies several errors in the current permit that need to be corrected to ensure that control devices are properly identified in Section 1.0 and that appropriate permit conditions are included for the boilers and process heaters. The corrections have been made and are listed in Section II of this review and more detail on the permit condition changes is found in Section III of this review.

This permit review covers only the corrections and updates made to the permit with this revision. The attached permit review for applications 14A and 14C, prepared by Ms. Heather Sands, P.E. describes the project modifications in depth including the permitting history, descriptions of the process changes and new equipment and regulatory analysis.

II. Permit Modifications/Changes and TVEE Discussion

The following changes were made to the Fortron Industries, LLC – Wilmington, Air Permit No. 07323T20:

Page No(s).	Condition No.	Description of Change(s)
Cover letter		Amended application type, permit revision numbers and dates and added increment tracking for NO _x , PM ₁₀ and SO ₂ .
Cover letter attachment	Insignificant Activities	Added the gasoline-fired power washer (ID No. IMA-890) to the list of insignificant activities.
1	Permit Cover Page	Updated permit revision number and permit issuance and expiration dates
2-39	All	Updated the permit revision number in header; corrected typographical errors, updated 2.2.B condition reference numbers and updated to the current permit language.
5-7	Section 1, Table	Updated the page number references and corrected the control devices for the following sources: <ul style="list-style-type: none"> • VE-431R1 and VE-2431 • VE-081, VE-082, VE-208A and VE-2082 • VE-2744
12	2.1 A.4	Made the following changes: <ul style="list-style-type: none"> • Corrected the sulfur content limit to 0.5 percent (2.1.A.4.i.i) • Deleted non-applicable condition 2.1. A.4.i.iii. • Corrected reference in 2.1.A.4.i.i to “Section 2.1.A.4.g.”
15	2.1 A.5	Made the following changes: <ul style="list-style-type: none"> • Added the No. 1 hot oil process heater (ID No. FU-081R1) to the list of equipment subject to 2.1 A.5.I.iv. • Deleted condition 2.1 A.5.I.iii and renumbered A.5.I.iv through A.5.I.vi as through A.5.I.v.
25	Section 2.2 B	Removed the no longer applicable 2D .0958 work practices in Condition 2.2.B.1 and renumbered 2.2 B.2 and 2.2 B.3 as 2.2 B.1 and 2.2 B.2.

The following updates were made to the Title V Equipment Editor (TVEE):

- Added a new gasoline-fired power washer (ID No. IMA-890) as an insignificant activity
- Changed the control system for VE-431R1 and VE-2431 to CS-1 (FU-751R1, TW-728, HE-721, HE-722, HE-2721, VS-721, VS-2721, VS-722)
- Changed the control system for VE-081, VE-082, VE-208A and VE-2082 to CS-14 (FU-751R1, TW-728)

- Changed the control system for VE-2744 to CS-6 (FU-751R1)

III. Regulatory Review

The following presents a regulatory review of only the applicable regulations impacted by this step of the modification.

- 15A NCAC 2D .0958, Work Practices for Sources of Volatile Organic Compounds – Sources subject to this rule are required to comply with work practices standards for certain VOC emissions sources. On November 1, 2016, this rule was amended to limit its applicability to affected sources in the maintenance area for the 1997 8-hour ozone standard. New Hanover County has never been identified as non-attainment for ozone. Thus, the 02D .0958 rule has been removed from the permit.
- 15A NCAC 2D .0524, New Source Performance Standards (NSPS) – The two hot oil process heaters (ID Nos. FU-081R1 and FU-2081), and the two boilers (ID Nos. BLR-1 and BLR-2) are subject to 40 CFR Part 60, Subpart Dc: Standards of Performance for Small Industrial- Commercial-Institutional- Steam Generating Units. while firing No. 2 fuel oil. Subpart Dc does not have standards for when natural gas is fired in these units.

NSPS Dc limits the sulfur content of the fuel oil fired in Nos. 1 and 2 hot oil heaters and the boilers to less than or equal to 0.50 percent by weight. However, existing permit condition 2.1.A.4.1.i. requires that the Permittee “*purchase ultra-low sulfur (i.e., less than or equal to 15 parts per million sulfur content) No. 2 oil as backup fuel.*” Although Fortron currently purchases ultra-low sulfur No. 2 oil and plans to continue doing so, the permit condition has been corrected in the permit to reflect the NSPS Dc sulfur content requirement. Additionally, Permit Condition 2.1.A.4.i.iii has been deleted as it is not relevant to the site-specific monitoring plan, which is included with the application.

- 15A NCAC 2D .1111, National Emission Standards for Hazardous Air Pollutants (NESHAP) The two hot oil process heaters (ID Nos. FU-081R1 and FU-2081), and the two boilers (ID Nos. BLR-1 and BLR-2) are subject to the Boiler NESHAP under 40 CFR Part 63, subpart DDDDD, also known as the Boiler MACT. Both heaters and both boilers only burn fuel oil during a gas curtailment or gas supply interruption and thus, are classified as units in the designed to burn gas I subcategory of the Boiler MACT. After an initial tune-up, units in the gas I subcategory are required to have a tune-up every five years. The permit has been corrected to show that a subsequent tune-up is required for the No. 1 hot oil heater every five years and no more than 61 months after the previous tune-up.

IV. Incremental Emission Increases

New Hanover County triggered PSD minor baseline dates for particulate matter (10 microns or less, PM10) and sulfur dioxide (SO₂) in 1979 and for nitrogen oxides (NO_x) in 1991. The incremental emission increases of NO_x, PM10 and SO₂ resulting from the expansion of the PPS production process and the addition of two boilers and a process heater are listed below and will be tracked by DAQ.

Incremental Increases in Emissions due to PPS Expansion and New Boilers

	NO _x lb/hr	PM ₁₀ lb/hr	SO ₂ lb/hr
Facility-Wide After Expansion	69.8	13.1	35.4
Facility-Wide Pre-Modification	45.9	4.28	23.7
Facility-Wide Incremental Increase	23.9	8.8	11.7

V. Facility Compliance Status

The last full inspection of this facility was completed on September 9, 2016 by Mark Hedrick of the Wilmington Regional Office (WiRO). In the inspection report, Mr. Hedrick stated, *“Accept this facility as operating in compliance during the time of inspection.”*

VI. Permit Review

On May X, 2017, a final draft version of Permit No. 07323T21 and the associated review document were sent to Mr. Luis Mendoza of Fortron Industries and Mr. Mark Hedrick, WiRO for their review and comments.

XII. Public Notice and Comments

The draft permit was sent to public notice and EPA for review on May X, 2017. The public comment period expired on June X, 2017 with ____ comments received. EPA review expired on July X, 2017 with _____ comments received.

XII. Recommendation

The Title V Permit application for Fortron Industries LLC, located in Wilmington, North Carolina has been reviewed by NC DAQ to determine compliance with all applicable procedures and requirements. NC DAQ has determined that this facility is complying or will achieve compliance with all applicable requirements as specified in the draft Permit No. 07323T21.

NC DAQ recommends? issuance of the modified air permit No. **07323T21**.

ATTACHMENT: T20 PERMIT REVIEW

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date: April 22, 2015

Region: Wilmington Regional Office
County: New Hanover
NC Facility ID: 6500303
Inspector's Name: Mark Hedrick
Date of Last Inspection: 03/21/2014
Compliance Code: 3 / Compliance - inspection

Facility Data <i>Applicant (Facility's Name): Fortron Industries LLC</i> Facility Address: Fortron Industries LLC 4600 Highway 421 North Wilmington, NC 28402 SIC: 2821 / Plastics Materials And Resins NAICS: 325211 / Plastics Material and Resin Manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V				Permit Applicability (this application only) SIP: NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other: <i>No new regulations apply as a result of this permit modification.</i>			
Contact Data				Application Data			
Facility Contact Lisa Gideon Environmental & Compliance Manager (910) 341-3152 4600 Hwy 421 North Wilmington, NC 28402+0327		<i>Authorized Contact</i> Luis Mendoza Site Manager (910) 343-5000 P.O. Box 327 Wilmington, NC 28402		<i>Technical Contact</i> Lisa Gideon Environmental & Compliance Manager (910) 341-3152 4600 Hwy 421 North Wilmington, NC 28402+0327		<i>Application Number: 6500303.14A and .14C</i> Date Received: 08/01/2014 and 12/16/14 Application Type: Modification Application Schedule: TV-Sign-501(c)(2) and TV Minor <i>Existing Permit Data</i> Existing Permit Number: 07323/T19 Existing Permit Issue Date: 09/23/2013 Existing Permit Expiration Date: 08/31/2018	
<i>Total Actual emissions in TONS/YEAR:</i>							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2013	40.59	12.30	20.84	9.97	8.09	17.99	7.76 [Dichlorobenzene(p), 1,4-]
2012	47.12	12.18	29.99	8.34	7.90	24.97	13.57 [Dichlorobenzene(p), 1,4-]
2011	8.62	44.40	61.30	13.23	1.56	29.89	22.67 [Dichlorobenzene(p), 1,4-]
2010	6.39	33.93	34.82	6.53	0.8500	16.55	12.48 [Dichlorobenzene(p), 1,4-]
2009	7.94	23.37	20.59	3.61	0.7300	8.80	6.18 [Dichlorobenzene(p), 1,4-]
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <i>Review Engineer: Heather Sands</i> Review Engineer's Signature: _____ Date: April 22, 2015 </div> <div style="width: 50%;"> <i>Comments / Recommendations:</i> Issue 07323/T20 Permit Issue Date: April 22, 2015 Permit Expiration Date: August 31, 2018 </div> </div>							

I. Purpose of Application

Fortron Industries, LLC (Fortron) currently holds Title V Permit No. 07323T19, with an expiration date of August 31, 2018 for a chemical manufacturing plant in Wilmington, New Hanover County, North Carolina. Fortron submitted a permit application (No. 6500303.14A) for a permit modification due to a

proposed construction project. This application is being processed the first step of a two-step significant permit modification.

The proposed construction project involves the expansion of the polyphenylene sulfide (PPS) production process. Included in the project is the installation of a new reactor, various processing equipment, and a new process heater. The scope of the project includes:

- Increasing PPS production capacity from 32 to 38 million pounds per year.
- Replacement of the existing hydrogen chloride (HCl) storage tank and scrubber with a new, larger storage tank. No new control device will be installed.
- The following new units will be installed and will be venting to the existing thermal oxidizer:
 - A new polymerization reactor;
 - A new thermanol storage tank;
 - A new wet polymerization storage tank;
 - A new sour brine tank;
 - A new brine filtrate tank (listed as an insignificant source);
 - A new 68,000 gallon spent solvent storage tank;
 - A new filter press core blow tank;
 - A new salt dryer which is a replacement of the existing salt dryer; and
 - Replacement of the salt dissolving tank.
- Install a new salt press.
- Install a new 23,000 gallon sodium hydroxide storage tank.
- Install a new No. 2 oil process heater.
- Rename the natural gas/No. 2 fuel oil-fired hot oil heater as the No. 1 hot oil process heater.
- Move the existing salt press from the insignificant activities list to the significant list.

Concurrent to the expansion to the PPS process, Fortron included, in their permit application, the installation of two new boilers. According to Fortron, although the two projects are unrelated, the permit application addresses the prevention of significant deterioration (PSD) applicability of the combined projects.

In addition Fortron submitted a permit application (No. 6500303.14C) for a minor permit modification. The permit application requests modification to the NSPS monitoring, recordkeeping, and reporting requirements for the existing No. 1 hot oil heater (FU-081R1) to allow the facility flexibility by using fuel oil sampling as an alternative to fuel supplier certification to demonstrate compliance with the sulfur dioxide standards. Also as a part of the submittal, Fortron requested that DAQ address the same requirements for the new No. 2 hot oil heater (ID No. FU-2081) and boilers (BLR-1 and BLR-2). This was considered an addendum to Permit Application No. 6500303.14A.

II. Facility and Project Description

The Fortron facility is currently permitted to operate batch process units that manufacture polyphenylene sulfide (PPS) and are controlled by a thermal oxidizer; raw material storage operations; support operations; product storage operations; and packaging operations.

Fortron is requesting a permit to construct two boilers (ID Nos. BLR-1 and BLR-2) to be installed as an alternative source of steam, which is currently being supplied by Invista, in the event that the Invista contract is terminated or steam is unable to be supplied for an unforeseen reason.

In addition, Fortron is requesting a permit to expand the PPS production process. The PPS production will increase from 32 to 38 million pounds per year as a result of this project. This project is unrelated to the boiler installation, but is being permitted along with the boiler installation to remove any potential concerns regarding PSD permitting. The requested modifications are summarized in the following table.

Table 1. Summary of Facility Modifications for PPS Project

ID No.	Equipment Description	Control Device ID No.	Control Device Description	Pollutant
Equipment Being Added				
TA-161R1	Hydrogen chloride storage tank (15,000 gallons)	None	None	HCl
RE-2221	Polymerization reactor connected to the continuous flash separator (VE-2281)	FU-751R1 installed on VS-2721	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input) installed on a continuous vent system	HAP, VOC
		AND VE-2203 vented to FU-751R1	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input) installed on H2S absorber/internal process recycle units	HAP, VOC
VE-2082	Therminol storage tank	FU-751R1	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input)	HAP, VOC
VE-2241	Wet polymerization storage tank D	FU-751R1 installed on VS-722	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input) installed on a cyclic vent systems	HAP, VOC
VE-2733	Sour brine tank	FU-751R1 installed on TW-713-1 and TW-713-2	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input) installed on two NaSH recovery towers	HAP, VOC
ITA-2736	Brine filtrate tank (Insignificant activity)	FU-751R1	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input)	HAP, VOC
TA-2501	Spent solvent storage (68,000 gallons)	FU-751R1 installed on VS-2721	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input) installed on a continuous vent system	HAP, VOC
VE-2744	Filter press core blow tank	FU-751R1 installed on TW-713-1 and TW-713-2	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input) installed on two NaSH recovery towers	H ₂ S, n-methyl-2-pyrrolidone (NMP), and acetone

ID No.	Equipment Description	Control Device ID No.	Control Device Description	Pollutant
DR-431R1	Salt dryer (5,000 pounds sodium chloride per hour maximum throughput)	FU-751R1 installed on VS-721	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input) installed on a continuous vent system	HAP, VOC
VE-431R1	Salt dissolving tank	FU-751R1 installed on TW-713-1 and TW-713-2	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input) installed on two NaSH recovery towers	HAP, VOC
MA-2741	Salt Press venting to atmosphere during dump process	None	None	H2S, NMP, acetone
ITA-172	Sodium hydroxide storage tank (23,000 gallons) (Insignificant activity)	None	None	
FU-2081	Duel fuel-fired (natural gas and backup No. 2 fuel oil) No. 2 hot oil process heater (55.0 million Btu per hour heat input) with low NOX burners.	None	None	
Equipment To Rename				
FU-081R1	No. 1 hot oil process heater (formerly oil-fired hot oil furnace)	None	None	
MA-741R1	Salt press (formerly IMA-741-R1) venting to atmosphere during dump process	None	None	H2S, NMP, acetone
Equipment being removed				
TA-161	Hydrogen chloride storage tank (7,615 gallons)	TW-151	One scrubber (5.0 gallons per minute circulation rate)	HCl
DR-431	Salt dryer	FU-751R1 installed on VS-721	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input) installed on a continuous vent system	HAP, VOC
VE-431	Salt dissolving tank	FU-751R1	Natural gas/No. 2 fuel oil-fired thermal oxidizer with low NOX burner (11.0 million Btu per hour maximum heat input) installed on a continuous vent air system	HAP, VOC

III. History/Background/Application Chronology

Permit History since Last Title V Renewal

September 23, 2013	Title V Renewal. Air Permit No. 07323T19 was issued with an expiration date of August 31, 2018.
August 1, 2014	Fortron submitted a notice of intent to construct a new reactor, various processing equipment and a new process heater which would result in an increase in production of the PPS process from 32 to 38 million pounds per year.
August 7, 2014	DAQ submitted a letter approving the notice of intent to construct request permitting Fortron to commence construction on the proposed PPS expansion immediately.

Application Chronology

August 1, 2014	Attached to the notice of intent to construct, Fortron submitted a permit application requesting approval of installation and construction of the PPS expansion project and two new boilers.
September 2, 2014	Memorandum from Tom Anderson, AQAB to Ms. Heather Sands summarizing the modeling analysis was completed. Refer to Section VII for a more detailed discussion on the modeling analysis.
September 19, 2014	Additional information request sent via email from Heather Sands, DAQ, to Fortron. Information requested included clarifications and questions regarding emission calculations.
October 17, 2014	Via email, Fortron submitted a response to the September 2014 additional information request. Response included a process flow diagram, further clarification to the MON applicability analysis, and revised emission calculations.
October 30, 2014	Site visit to Fortron
November 13, 2014	Additional information request sent via email to Fortron from Heather Sands, DAQ. Requested TRE calculation for the salt dryer.
December 3, 2014	In response to the additional information request on November 13 th , Fortron submitted the salt cake TRE calculation.
December 12, 2014	DAQ received a permit application (No. 6500303.14C) for a minor modification to the air permit T19. The permit application contained an addendum to Permit Application No. 6500303.14A. As such, Permit Application No. 6500303.14A was consolidated into Application No. 6500303.14C.
December 15, 2014	Additional information request sent via email to Fortron from Heather Sands, DAQ. Requested clarification on several items in Permit Application No. 6500303.14C.
December 16, 2014	DAQ sent an acknowledgement letter for the minor modification permit application 6500303.14C.

December 19, 2014	Response to December 15 th additional information request was received.
February 5, 2015	Additional information request sent via email to Fortron from Heather Sands, DAQ. Requested PSD calculations for the project without the fuel usage restrictions, based on revisions to approach from the October 17 th submittal.
February 6, 2015	Fortron submitted the revised PSD calculations for the project without the fuel usage restrictions, as requested.
February 27, 2015	Additional information request via telephone conversation between William Willets, Permits Section Chief and Dale Overcash, Trinity Consultants. Information was requested regarding how Fortron intended to comply with opacity limits when firing No. 2 fuel oil and using fuel sampling as a compliance method.
March 12, 2015	Fortron submitted a site-specific monitoring plan for opacity monitoring under the Boiler NSPS of the Nos. 1 and 2 hot oil heaters and the boilers when No. 2 fuel oil is being fired.
March 16, 2015	Draft Permit and Permit Review sent out for comments.
March 24, 2015	Fortron submitted comments on the draft permit and draft air permit review. In addition, via separate email, Fortron informed DAQ that the Nos. 1 and 2 hot oil heaters and the boilers (ID Nos. FU-081R1, FU-2081, BLR-1 and BLR-2) used oxygen trim systems. This changes the tune-up schedule for these units from annual to once every five years. However, DAQ informed Fortron (via email) that since the No. 1 hot oil heater was already permitted to conduct annual tune-ups, the modification to relax the tune-up to once every five years would need to be included in the second step of this significant permit modification.
March 31, 2015	Additional information request sent via email to Fortron from Heather Sands, DAQ. Requested clarification on the comments submitted March 24 th . Comments conflicted with information received prior to draft permit being submitted.
April 15, 2015	Meeting between Fortron and their consultant, Trinity and DAQ to discuss the draft permit. In addition, Fortron informed DAQ of a responsible official change. Fortron agreed to submit the following items as followup on this meeting: (1) An updated A1 form identifying Luis Mendoza as the Responsible Official; (2) A letter noting Luis Mendoza as Site Manager from our Vice President of Engineered Materials; (3) A redlined version of Section 1 reflecting the changes necessary to accurately reflect how equipment is vented to the TO; and (4) An updated Site Specific Monitoring Plan that includes Method 22 observations.
April 16, 2015	Fortron submitted items requested during April 15 th meeting.
April 20, 2015	Revised draft permit resubmitted to Fortron for review of items changed due to March 24, 2015, comments and April 15, 2015 meeting.
April 22, 2015	Fortron submitted minor comments on permit application.
April 22, 2015	Final Permit Issued.

IV. Permit Modifications/Changes and TVEE Discussion

Table 2 summarizes the changes to the current permit as a part of this modification. As shown Table 2, several changes were made to the emission source table in Section 1 of the permit. These changes translated to changes in the Title V Equipment Editor (TVEE) as well. As discussed above, three emission sources are being replaced as a part of this project: (1) the salt dryer (ID No. DR-431) was end-dated in TVEE and a new salt dryer (ID No. DR-431R1) was added; and (2) the hydrochloric acid tank (ID No. TA-161) was end-dated in TVEE and a new hydrochloric acid tank (ID No. TA-161-R1) was added; and (3) the salt dissolving tank (ID No. TA-431) was end-dated in TVEE and a new salt dissolving tank (ID No. TA-431R1) was added.

In addition, Fortron identified some emission sources in the Section 1 table for which the control device configurations were incorrectly shown. These were corrected (as identified in the table below) in Section 1 of the permit as well as TVEE. The NaSH recovery towers (TW-713-1 and TW-713-2) were incorrectly listed as emission sources. In the April 15th meeting (and their April 16th email), Fortron stated that the correct layout for these sources would be to list the individual sources (ID Nos. VE-203, VE-2203, VE-201R1, VE-2201, VE-731, VE-2731, TA-713-1, TA-713-2, VE-733, and VE-2733). Therefore the two NaSH recovery towers were end-dated in TVEE as emission sources and added as control devices. The individual source were then added to TVEE and routed to the NaSH recovery towers and the thermal oxidizer.

Table 2. Summary of Changes to Permit

Old Page No.	New Page No.	Condition No.	Description of Change(s)
Cover letter	Cover letter		- Amended application type, permit revision numbers and dates.
Cover letter attachment	Cover letter attachment	Insignificant Activities	- Updated to current permit language; - Added new emission sources to table (ID Nos. ITA-2736, ITA-172); - Moved three sources from the table in Section 1 to the insignificant activities list (ID Nos. ITA-171, ITA-181, and ITA-191). - Based on April 22, 2015 email from Permittee, added two sources to the table (ID Nos. IVE-2351 and ITA-736)
Cover letter attachment	Cover letter attachment	Summary of changes to permit	- Updated to current permit language.
1	1	Permit Cover Page	- Updated permit revision number and permit issuance date; and - Updated Section Chief signature line.
2-31	2-39	All	- Updated Permit Revision Number in header; - Corrected typographical errors; - Updated to current permit language.

Old Page No.	New Page No.	Condition No.	Description of Change(s)
3-7	3-8	Section 1, Table	<ul style="list-style-type: none"> - Updated page numbers for each emission source ID; - Added new PPS expansion emission sources and new boilers; - Based on email from Permittee on April 16, 2015, made corrections in table to reflect facility vent configuration for VE-531, VE-2531, VE-431R1, VE-2431, TA-121, TA-122, TA-718, and VE-733 and modified the NaSH recovery tower system (ID No. TW-713-1 and TW-713-2) so that each emission point routed to the NaSH system is listed separately and the NaSH system is a control device. - Moved the salt press (ID No. MA-741R1) from the insignificant activities list to the table in Section 1.
8-11	9-18	Section 2.1 A	<ul style="list-style-type: none"> - Updated the Particulates (15A NCAC 2D .0503) and Visible Emissions (15A NCAC 2D .0521) standards to most current permit language; - Added the new No. 2 hot oil process heater and boilers (ID Nos. FU-2081, BLR-1 and BLR-2) to condition; - Added the Sulfur Dioxide (15A NCAC 2D .0524) standard, which applies for all four emission units when firing natural gas; - Updated the language for the Boiler NSPS, Subpart Dc, for the Nos. 1 and 2 hot oil process heaters and the boilers; - Updated the language for the Boiler MACT, Subpart DDDDD, for the Nos. 1 and 2 hot oil process heaters and the boilers.
21	29	Section 2.2 B.2	- Revised the Toxic Air Pollutant emissions limitations based on the revised modeling analysis submitted for the PPS expansion and new boilers.

V. Regulatory Review

The following presents a regulatory review of applicable regulations impacted by this modification.

- 15A NCAC 2D .0503, Particulates from Fuel Burning Indirect Heat Exchangers – Three new units are subject to this regulation: the new natural gas/No. 2 fuel oil-fired No. 2 hot oil heater (55 million Btu/hr maximum heat input, ID No. FU-2081) and the new natural gas-fired boilers (ID Nos. BLR-1 and BLR-2) each with a natural gas maximum heat input of 90.6 million Btu/hr and a No. 2 fuel oil (as backup) maximum heat input of 87.1 million Btu/hr. This regulation limits particulate emissions based on the rating of the boilers and process heaters at the facility using the following equation:

$$E = 1.090 Q^{-.2594}$$

Where,

E = Allowable emissions limit for particulate matter, lb/million Btu; and

Q = Maximum heat input rate for all indirect heat exchangers, million Btu/hr.

There is an existing process heater onsite, with a maximum heat input of 44 million Btu/hr (ID No. FU-081R1), therefore the total natural maximum heat input rate for all heat exchangers at the facility, Q, is 280.2 million Btu/hr. The resulting allowable emissions, E, for the new boilers using the above

calculation is 0.25 lb/million Btu. (Note: that if the No. 2 fuel oil maximum heat input rate was used, the allowable emissions would be higher, and therefore, only the natural gas heat input rate was used.) There are no monitoring, recordkeeping and reporting requirements when either natural gas or No. 2 fuel oil is combusted in the new boilers and the new process heater.

- 15A NCAC 2D .0516, Sulfur Dioxide Emissions from Combustion Sources – This regulation applies to combustion sources, but not those that are subject to new source performance standards under 2D .0524. The new No. 2 hot oil heater (ID No. FU-2081) and the two new boilers (ID Nos. BLR-1 and BLR-2) are subject to new source performance standards under 40 CFR Part 60, Subpart Dc (Boiler NSPS). According to 15A NCAC 2D .0516(b), a source subject to an emission standard for sulfur dioxide in Rule .0524 shall meet the standard in that particular rule instead of the standard in .0516. Therefore, since the Boiler NSPS does not have applicable requirements for SO₂ emissions when firing natural gas in these units (see Section IV.A, below, for details), the SO₂ emissions limits in 2D .0516 only apply when natural gas is fired.

It should also be noted that the existing permit did not have a condition for regulation 2D .0516 for the No. 1 hot oil heater (FU-081R1). The permit review that was issued along with Permit T19 referred to this regulation and that the hot oil heater was subject. Therefore, it appears that it was inadvertently left out of the permit and has been added in this permit revision. No compliance issues are expected because, as described above, the regulation only applies when natural gas is fired in the No. 1 hot oil heater and there are no associated monitoring, recordkeeping and reporting requirements.

- 15A NCAC 2D .0521, Control of Visible Emissions – This regulation applies to the new No. 2 hot oil heater (ID No. FU-2081) and the two new boilers (ID Nos. BLR-1 and BLR-2). Sources subject to NSPS under 2D .0524 are not subject to 2D .0521. According to 15A NCAC 2D .0521(b), sources subject to a visible emission standard in Rule .0524 shall meet that standard instead of the standard contained in .0521. As discussed above, these sources are all subject to 40 CFR Part 60, Subpart Dc (Boiler NSPS). Since the Boiler NSPS does not have applicable visible emissions requirements when firing natural gas in these units (see Section IV.A, below, for details), the visible emissions standards in .0521 only apply when natural gas is fired.
- 15A NCAC 2D .0524, New Source Performance Standards – The new No. 2 hot oil heater (ID No. FU-2081) and the two new boilers (ID Nos. BLR-1 and BLR-2) are subject to the Boiler NSPS under this regulation. See Section IV.A, below, for a detailed discussion on the NSPS.
- 15A NCAC 2D .0958, Work Practices for Sources of Volatile Organic Compounds – Sources subject to this rule are required to comply with work practices standards for certain VOC emissions sources. Under Permit No. 07323T19, Fortron is subject to this rule facility-wide. The new equipment will also be subject to the work practice standards in Section 2.2 B.1 of the permit.
- 15A NCAC 2D .1100, Control of Toxic Air Pollutants – Fortron previously modeled TAPs that exceeded the TPERs and their current permit contains TAP limits under 2D .1100 for the following: hydrogen chloride and hydrogen sulfide. Due to increases in TAP emissions due to the addition of the new PPS equipment (as well as the new boiler and process heater), Fortron submitted a revised modeling analysis. See Section VII, below, for additional information regarding NC Air Toxics.
- 15A NCAC 2D .1111, National Emission Standards for Hazardous Air Pollutants (NESHAP) – Much of the new equipment being installed is subject to the Miscellaneous Organic Chemical Manufacturing NESHAP (MON) under 40 CFR Part 63, Subpart FFFF. Furthermore, the new No. 2

hot oil heater (ID No. FU-2081) and the two new boilers (ID Nos. BLR-1 and BLR-2) are subject to the Boiler NESHAP under 40 CFR Part 63, subpart DDDDD. The NESHAP applicability and requirements are addressed in Section IV.B, below.

- 15A NCAC 2D .1806, Control and Prohibition of Odorous Emissions – This regulation applies facility-wide and the new PPS process equipment will also be subject. No changes to the permit conditions will be necessary as a result of this modification.
- 15A NCAC 2Q .0711, Emission Rates Requiring a Permit – Fortron is subject for thirteen NC-regulated TAPs above the toxic permitting emission rate (TPER) listed in 2Q .0711. A detailed discussion of the NC Air Toxics is found in Section VII, below.

VI. NSPS, NESHAPS/MACT, NSR/PSD, 112(r), CAM

A. New Source Performance Standards

As discussed above, the Nos. 1 and 2 hot oil heaters (ID No. FU-081R1 and FU-2081) and the two new boilers (ID Nos. BLR-1 and BLR-2) are subject to the Boiler NSPS under 40 CFR Part 60, Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional-Steam Generating Units. This is the only NSPS currently applicable to the facility. Subpart Dc contains standards for sulfur dioxide and particulate (including opacity). The following discusses each of these standards. It should be noted that although the No. 1 hot oil heater (ID No. FU-081R1) is not being modified as a part of this project, some of the language in the existing permit was updated to current permit language. Therefore, the No. 1 hot oil heater will be discussed along with the new heater and new boilers.

Sulfur Dioxide Standards

In accordance with NSPS Dc, the sulfur content of the fuel oil fired in Nos. 1 and 2 hot oil heaters and the boilers is limited to less than or equal to 0.50 weight percent. Fortron currently demonstrates compliance with this standard using fuel oil supplier certifications as described under 40 CFR 60.46c(e) for the No. 1 hot oil heater (ID No. FU-081R1). These certifications contain (1) the name of the oil supplier, (2) a statement from the oil supplier that the oil complies with the specification under the definition of distillate oil in 40 CFR § 60.41c; and (3) a certified statement signed the Permittee that the records of fuel supplier certification submitted represent all of the No. 2 fuel oil fired during the quarter.

In Permit Application No. 6500303.14C (addendum to No. 6500303.14A), Fortron requested that as an alternative to the fuel supplier certification compliance method, they also be allowed to comply with the sulfur dioxide standards via fuel oil sampling for the Nos. 1 and 2 hot oil heaters (ID Nos. FU-081R1 and FU-2081) and the boilers (BLR-1 and BLR-2). Therefore, the fuel sampling requirements in 40 CFR 60.46c(d)(2) were included in the permit modification as an alternative compliance demonstration for the sulfur dioxide standards.

Subpart Dc does not have standards for sulfur dioxide when natural gas is fired in these units.

Particulate Matter Standards

Since Fortron is complying with the SO₂ limit by combusting only oil that contains no more than 0.50 weight percent sulfur, the Nos.1 and 2 hot oil heaters and the boilers are not subject to the PM limit in 40 CFR 60.43c [40 CFR 60.43c(e)(4)].

Opacity Standards

Under 40 CFR §60.43(c) the discharging of any gases from the Nos. 1 and 2 hot oil heaters (ID Nos. FU-081R1 and FU-2081) and the boilers (ID Nos. BLR-1 and BLR-2) into the atmosphere that exhibit greater than 20 percent opacity (6-minute average) is prohibited, except for one 6-minute period per hour of not more than 27 percent opacity at all times. This applies when No. 2 fuel oil is combusted in these sources.

Opacity monitoring is not required when natural gas is fired in the Nos. 1 and 2 hot oil heaters and the boilers. Since Fortron will only be firing No. 2 fuel oil during natural gas curtailment or gas supply interruptions (these units are in the “unit designed to burn gas1 subcategory” of the Boiler MACT, see Section VI.B, below), the opacity monitoring will only be required during these times. Therefore, the permit was modified to incorporate these Subpart Dc requirements for the Nos. 1 and 2 hot oil heaters and the boilers. When fuel oil is fired, a continuous opacity monitoring system (COMS) is required unless otherwise exempted. Section 60.47c(c) states the following:

“...facilities that burn only distillate oil that contains no more than 0.5 weight percent sulfur...and that do not use a post-combustion technology to reduced SO₂ or PM emissions and that are subject to an opacity standard in §60.43(c) are not required to operate a COMS if they follow the applicable procedures in §60.48c(f).”

Section 60.48c(f) contains the requirements for fuel supplier certification. Under their current permit (07323T19), Fortron is complying with the sulfur dioxide standards using fuel supplier certifications and therefore was not required to operate a COMS for the No. 1 hot oil heater.

As previously discussed, Fortron is requesting to have the flexibility to comply with the sulfur dioxide standards using fuel sampling. When burning No. 2 fuel oil and using fuel sampling to comply with the sulfur dioxide standards, §60.47c(c) does not apply under this scenario.

However, §60.47c(f), states that if only gaseous fuels and/or fuel oils that contain no more than 0.5 weight percent sulfur, a COMS is not required if an approved site-specific monitoring plan is followed. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard. For testing performed as part of this site-specific monitoring plan, an alternative to the notification and reporting requirements specified in §§60.8 and 60.11 that the owner or operator submit any deviations with the excess emissions report required under §60.48c(c) may be required by DAQ.

Additionally, Subpart Dc contains the following requirements when exempted from COMS. The Permittee is required to conduct subsequent Method 9 testing on the following schedule [60.47c(a)]:

- If no VE is observed, within 12 months from the date that the most recent performance test was conducted or within 45 days of the next day a fuel with an opacity standard is combusted, whichever is later.
- If VE are observed but the maximum 6-minute average opacity is ≤ 5 percent, within 6 months from the date that the most recent performance test was conducted or within 45 days of the next day a fuel with an opacity standard is combusted, whichever is later.
- If the maximum 6-minute average opacity is >5 and ≤ 10 percent, within 3 months from the date that the most recent performance test was conducted or within 45 days of the next day a fuel with an opacity standard is combusted, whichever is later.
- If the maximum 6-minute average > 10 percent within 45 days of the next day a fuel with an opacity standard is combusted, whichever is later.

Section 60.47c(a)(2) and (a)(3) provide the following alternatives:

- If the maximum 6-minute average opacity is less than 10 percent using Method 9 during the most recent performance test, the Permittee may elect to conduct subsequent monitoring using Method 22 as follows:
 - Conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A-7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (i.e., 30 seconds per 10 minute period).
 - If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation.
 - If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (i.e., 90 seconds per 30 minute period), either document and adjust the operation of the boilers/heaters and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (i.e., 90 seconds) or conduct a new Method 9 performance test using the within 45 calendar days.
 - Method 22 monitoring can be reduced to once every 7 operating days if no visible emission are observed for 10 operating days when firing No. 2 fuel oil. Daily observations must be resumed if any visible emissions are observed.
- If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 performance test use a digital opacity compliance system according to an approved site-specific monitoring plan.

In §60.13(i) of the NSPS General Provisions (40 CFR 60, subpart A), there is an allowance for an affected facility that is infrequently operated as follows:

“(i) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring procedures or requirements of this part including, but not limited to the following:

...

(2) Alternative monitoring requirements when the affected facility is infrequently operated.”

On April 16, 2015, Fortron submitted the following as their site-specific monitoring plan in accordance with §60.47c(f):

1. Fortron will continue to purchase ultra-low sulfur No. 2 oil as backup fuel (≤ 15 PPM sulfur content), which is the cleanest fuel oil.
2. Fortron will acquire fuel oil with fuel supplier certifications; or Fortron will either sample fuel oil for sulfur content from (1) each shipment received at the site or (2) immediately after filling the tank, but prior to any combustion in the furnace.
3. As required by Subpart Dc, Fortron will keep records of all fuel usage on a monthly basis.
4. Fortron will comply with the definition of and any other requirements for a “unit designed to burn gas 1 subcategory” as specified in the Boiler MACT (40 CR Part 63, Subpart DDDDD), which will minimize fuel oil usage.
5. Fortron will perform regular maintenance on the oil burners to ensure they are properly set up to fire oil as specified by the vendor to meet vendor specifications.
6. In the event Fortron notices inefficient combustion while firing No. 2 oil, maintenance will be conducted immediately to address any noticeable issues.
7. In accordance with §60.13(i)(2), Fortron requests to conducts a Method 22 observation on the first day that oil is fired in the process heaters or boilers.

In addition, since they will only burn fuel oil during an episode as defined in “unit designed to burn gas 1 subcategory” of the Boiler MACT (i.e., a gas curtailment or gas supply interruption), Fortron requested to utilize the above site-specific monitoring plan for all fuel oil burned in the NSPS affected facilities in lieu of any Method 9 opacity monitoring.

DAQ does not agree that the NSPS provisions allow for the site-specific monitoring plan to replace the Method 9 opacity performance testing required in §60.47c(a). However, as allowed under 40 CFR 60.13(i), DAQ approves the use of Method 22 observations, a less involved test method, as an alternative monitoring requirements to demonstrate compliance with the visible emissions standards. As such, DAQ has added the site-specific monitoring plan submitted by Fortron. However, the permit contains additional language regarding when and how the Method 22 observations should be conducted to demonstrate compliance. Since Fortron maintains that the particulate emissions from burning No. 2 fuel oil are expected to be quite low, DAQ expects that the Method 22 testing would be a viable option for these boilers/heaters.

Based on the schedule specified in §60.47c(a), it would be necessary in certain situations, for Fortron to be required to start up the heaters/boilers using No. 2 fuel oil just to conduct the Method 9 tests. DAQ does not believe that it is appropriate to require the process heaters and boilers to be started up on No. 2 fuel oil in order to conduct the initial Method 9 test on the prescribed schedule. EPA has demonstrated its policy in these types of situations in the boiler MACT by allowing the tune-up to be conducted within 30 days of boiler startup if the boiler is not operating when the tune-up is required. Therefore, the permit requires Fortron to conduct the Method 9 testing at the next time No. 2 fuel oil is scheduled to be fired in the heaters/boilers if they are not using No. 2 fuel oil on the date under the schedules in §60.47c(a).

B. National Emission Standards for Hazardous Air Pollutants

Fortron is subject to three NESHAP under 40 CFR Part 63: Subpart FFFF (Miscellaneous Organic Chemicals NESHAP); Subpart ZZZZ (Reciprocating Internal Combustion Engine MACT); and Subpart DDDDD (Boiler MACT). This permit modification does not change the subpart ZZZZ requirements in the permit and will not be addressed below.

MON, Subpart FFFF

As previously discussed, much of the new equipment being installed as part of the PPS expansion project is subject to the MON. The permit contains the MACT requirements for the PPS process as follows:

- Group 2 Batch Process Vents
- Group 2 Continuous Process Vents with TRE > 5.0
- Heat Exchange Systems
- Group 2 Wastewater
- Equipment Leaks – Control Level 2
- Group 2 Storage Vessels, Group 2 Surge Control Vessels and Bottoms Receivers, and Group 2 Transfer Racks.

Table 3 presents a summary of MON applicability for each PPS emissions unit being added or modified. For each unit that is subject to the MON, the relevant permit condition is shown. As shown in Table 3, all of the new and or modified units will be included under existing permit conditions and no new MON requirements will be required to be added to the permit. Therefore, no permit modifications will be necessary for the addition of these new units.

Table 3. Summary of MON applicability

ID No.	Emission Unit ^a	Subject to MON?	Rationale for MON Applicability
TA-161R1	HCl storage tank (replaces HCl storage tank, ID No. TA-161)	Yes Section 2.2 A.7 (Group 2 Storage Vessels)	The storage tank meets the definition of a storage tank as defined in the MON. Based on the vapor pressure of HCl, it is classified as a Group 2 storage tank and does not have any requirements under the MON. Fortron will include information regarding the addition of the new tank in the compliance report.
RE-2221	Polymerization reactor	No	Fortron estimates emissions from the condenser flash separator (to which the reactor vents) to be less than 200 pounds per year and therefore does not meet the definition of a batch process vent under the MON. Fortron estimates that the new reactor will not increase emissions from the vent above 200 pounds per year.
VE-2082	Therminol storage tank	No	The emissions from this storage tank do not contain an organic HAP, hydrogen halide, or halogen HAP. Therefore, it does not meet the definition of storage tank under the MON.
VE-2241	Wet polymerization storage tank D	Yes Section 2.2 A.7 (Group 2 Surge Control Vessels)	According to Fortron, it does not meet the size or vapor pressure criteria to be considered a Group 1 storage tank. The tank meets the definition of a Group 2 surge control vessel under the MON. There are not any applicable requirements under the MON for this tank, but it will be included as a process change in the compliance report.
VE-2733	Sour brine tank	No	According to information provided by Fortron, this tank does not contain, contact, or emit HAP.
ITA-2736	Brine filtrate tank	No	According to information provided by Fortron, this tank does not contain, contact, or emit HAP.
TA-2501	Spent solvent storage tank	No	According to information provided by Fortron, this tank does not contain, contact, or emit HAP.
VE-2744	Filter press core blow tank	No	According to information provided by Fortron, this tank does not contain, contact, or emit HAP.
DR-431R1	Salt dryer (replaces salt dryer, ID No. DR-431)	Yes Section 2.2 A.3 (Group 2 Continuous Process Vents with TRE > 5.0)	The TRE calculation for this source shows that the TRE is greater than 1.9 (TRE = 18.2), making this a Group 2 continuous process vent under the MON. Group 2 continuous process vents do not have specific requirements under the MON. Fortron will include the process change in the compliance report.
VE-431R1	Salt dissolving tank (replaces salt dissolving tank VE-431)	Yes Section 2.2 A.7 (Group 2 Surge Control Vessels)	According to Fortron, it does not meet the size or vapor pressure criteria to be considered a Group 1 storage tank. The tank meets the definition of a Group 2 surge control vessel under the MON. There are not any applicable requirements under the MON for this tank, but it will be included as a process change in the compliance report.
MA-2741	Salt press	No	According to information provided by Fortron, this tank does not contain, contact, or emit HAP.
ITA-172	NaOH storage tank	No	According to information provided by Fortron, this tank does not contain, contact, or emit HAP.
MA-741R1	Salt press	No	According to information provided by Fortron, this tank does not contain, contact, or emit HAP.

^aSee Section II, above, for more details about each unit.

Boiler MACT, Subpart DDDDD

The No. 2 hot oil heater and the new boilers meet the definition of “unit(s) designed to burn gas 1 subcategory” in 40 CFR 63.7575 of Subpart DDDDD and are considered new sources as they will be constructed after June 2010. No emissions limits are applicable to new boilers which fire natural gas or other gas 1 fuels. The No. 2 hot oil heater and the new boilers are subject to work practices, including an annual boiler tune-up. The energy assessment is not required to demonstrate compliance with the MACT for new sources. The current language in the permit for the No. 1 hot oil heater, as related to the boiler MACT, was updated to be consistent with the current Subpart DDDDD permit language.

C. New Source Review/Prevention of Significant Deterioration

The Fortron facility falls under SIC code 2821, which is one of the SIC codes for which a PSD major source is one that has the potential to emit 100 ton or more of any criteria pollutant from both point sources and fugitive emission sources. Prior to this modification, the Fortron facility is a minor source under PSD.

As discussed above, the proposed project includes the addition of two new boilers (ID Nos. BLR-1 and BLR-2) and expansion of the PPS process, which includes a new process heater (ID No. FU-2081) and an increase in PPS production. Table 4 presents the emissions provided by Fortron showing the increases in emissions due to the proposed project.

Table 4. Increases in Emissions due to PPS Expansion and New Boilers

	A	B	C	D = B+C	E=A+D
Criteria Pollutant	Current Facility Emissions (tpy)	DB7 Increases (tpy)	New Boiler Increases (tpy)	Total Project Increases - DB7 + New Boilers (tpy)	Total Facility Emissions After Project (tpy)
PM ₁₀	18.2	4.6	5.5	10.1	28.3
PM _{2.5}	18.2	4.6	5.5	10.1	28.3
SO ₂	87.5	15.0	2.6	17.6	105.1
NO _x	56.7	12.9	40.8	53.7	110.4
VOC	76.8	19.2	18.2	37.4	114.2
CO	18.0	19.1	59.8	78.9	96.9
CO _{2e}	40,368	28,848	94,766	123,614	163,982

Since the Fortron facility is an existing minor source, PSD would be triggered if there is an increase in criteria pollutant emissions greater than 100 tpy (except for CO_{2e}, for which the threshold is 100,000 tpy). As shown in Table 4, the project increases for all pollutants are less than 100 tpy, with the exception of CO_{2e}, which are greater than 100,000 tpy. Because the total increases for the project exceeded the threshold for CO_{2e}, Fortron initially proposed a PSD avoidance limit to reduce emissions to below the 100,000-tpy threshold for CO_{2e} with a caveat in its application that the CO_{2e} PSD avoidance limit not apply if DAQ worked out changes to the DAQ rules for CO_{2e} as a result of a United States Supreme Court ruling.

On June 23, 2014 the United States Supreme Court issued a decision addressing the application of stationary source permitting requirements to GHG emissions. In its decision, the Supreme Court said that the EPA may not consider GHGs as an air pollutant for the purposes of determining whether a source is a major source required to obtain a PSD permit. Subsequent to this decision, the DAQ has revised its applicability rules via temporary amendment to remove this requirement (a permanent rule amendment process is underway) and 15A NCAC 2D .0544 has been modified to specifically exclude facilities from the requirement to obtain a PSD permit based solely on its GHG potential.

Therefore, because the other pollutants remain below the 100-tpy threshold, no PSD avoidance limits are necessary. However, the facility will be a major source for PSD with respect to future projects.

D. 112(r)

The facility is not subject to 40 CFR 68 Subpart C, Regulated Substances for Accidental Release Prevention. Fortron does not store any of the regulated substances in quantities above the thresholds. None of the new units being installed with this permit modification change the status of the facility with respect to 112(r).

E. CAM Applicability

Applicability to the CAM rule was addressed previously for the entire facility. Table 5 addresses CAM applicability for the new units being installed with this project. As shown in the table, none of the new units are subject to CAM.

Table 5. Summary of CAM Applicability

ID No.	Emission Source(s)	Control Device(s)	Controlled Pollutant(s)	Pre-Control PTE (tpy)	CAM Disqualifications/Exemption(s)	CAM Applicable?
FU-2081	No. 2 hot oil heater	None	N/A	N/A	These units do not use a control device to achieve compliance with the emission limitation or standard.	No
(BLR-1 and BLR-2)	Boilers	None	N/A	N/A		No
TA-161R1	HCl storage tank	None	HAP	0.034		No
ITA-172	NaOH storage tank	None	N/A	N/A		No
RE-2221	Polymerization reactor	FU-751R1	HAP/VOC	<100 tpy ^a	These units are controlled but the control device is not being used to achieve compliance with the emission limitation or standard.	No
VE-2082	Therminol storage tank	FU-751R1	HAP/VOC	<100 tpy ^a		No
VE-2733	Sour brine tank	FU-751R1	HAP/VOC	<100 tpy ^a		No
ITA-2736	Brine filtrate tank	FU-751R1	HAP/VOC	<100 tpy ^a		No
TA-2501	Spent solvent storage tank	FU-751R1	HAP/VOC	<100 tpy ^a		No
VE-2744	Filter press core blow tank	FU-751R1	HAP/VOC	<100 tpy ^a		No
MA-2741	Salt press	FU-751R1	HAP/VOC	<100 tpy ^a		No
MA-741R1	Salt press	FU-751R1	HAP/VOC	<100 tpy ^a		No
VE-2241	Wet polymerization storage tank D	FU-751R1	HAP/VOC	> 100 tpy	These units are subject to a MACT standard (Subpart FFFF) proposed after November 5, 1990 [Exempt from CAM pursuant to 15A NCAC 2D .0614(b)(1)(A)]	No
DR-431R1	Salt dryer (replaces salt dryer, ID No. DR-431)	FU-751R1	HAP/VOC	> 100 tpy		No

ID No.	Emission Source(s)	Control Device(s)	Controlled Pollutant(s)	Pre-Control PTE (tpy)	CAM Disqualifications/Exemption(s)	CAM Applicable?
VE-431R1	Salt dissolving tank (replaces salt dissolving tank VE-431)	FU-751R1	HAP/VOC	> 100 tpy		No

^aTotal VOC emissions increases from the PPS production are estimated to be 1.09 tpy after control. Using the 99% control efficiency, the total uncontrolled VOC emissions from the new PPS production equipment are estimated to be 109 tpy.

VII. Facility Wide Air Toxics

Under Air Permit No. 07323T19, issued on September 23, 2013, Fortron received limits for hydrogen chloride and hydrogen sulfide. These are the only two pollutants not covered by a 40 CFR Part 63 standard at Fortron. As part of this project, Fortron provided an analysis on the NC TAPs for the new emission sources. Table 6 was provided by Fortron. As shown in Table 6, modeling is required for the following NC TAPs that have exceeded the levels in 15A NCAC 2Q .0700: hydrogen chloride, hydrogen sulfide, p-dichlorobenzene, benzene, chlorine, formaldehyde, phenol, sulfuric acid, arsenic, beryllium, cadmium, chromium compounds, and mercury. Modeling was conducted and the analysis has been determined to adequately demonstrate compliance, on a source-by-source basis, for all toxics modeled.¹

Fortron requested removal of NC TAP from their permit for emission sources that are covered under applicable NESHAP. This leaves hydrogen chloride, hydrogen sulfide, chlorine and sulfuric acid as the only TAPs not subject to NESHAP. In order to ensure that no unacceptable risk will result from removal of other toxics, a facility-wide analysis was conducted for the TAP listed in the table. According to the Fortron permit application (No. 6500303.14A), the following assumptions were used in developing the emission rates and source parameters for the model.

- Modeled emissions sources include both point and fugitive sources (nine point and nine fugitive).
- Fugitive sources were modeled as volume source using parameters developed with guidance found in the AERMOD User's Guide.
- Emission rates reflect maximum short term emission rates, except for benzene emissions from the thermal oxidizer diversion stack (ID No. TODIVERT) and the fugitive truck unloading (ID No. FU03T). Both of these sources are intermittent emissions sources and it would be an overly conservative assumption to extrapolate short term hourly rates to annual averages.

AERMOD using five years (2008-2012) of meteorological data from Wilmington (surface) and Newport (upper-air) was used to evaluate impacts in both simple and elevated terrain. A determination of no unacceptable risk was made for all toxics being removed from the permit. The emission rate limits that will be added to the permit are presented in Table 7.

¹ Memorandum from Anderson, T. AQAB, to H. Sands, Environmental Engineer, RCO. "Review of Dispersion Modeling Analysis for Fortron Industries, LLC." September 2, 2014.

Table 6. Facility Wide NC TAP Emissions²

NCTAPs	Cas No	Total Emissions from Facility (lb/hr)	Total Emissions from Facility (lb/day)	Total Emissions from Facility (lb/yr)	2Q .0700 MEER Limits			Above Limit - Modeling Required		
					lb/hr	lb/day	lb/yr	lb/hr	lb/day	lb/yr
Hydrogen Chloride	7647-01-0	3.54E+00	8.51E+01	3.10E+04	0.18			Yes	Yes	
Hydrogen Sulfide	7783-06-4	6.35E-01	1.39E+01	1.66E+02		1.7			Yes	
p-Dichlorobenzene	106-46-7	1.69E+01	2.24E+02	7.13E+04	16.8			Yes		
Acetaldehyde	75-0-0	2.94E-04	2.94E-04	1.47E-04	6.8			No		
Acrolein	107-02-8	9.18E-05	9.18E-05	4.59E-05	0.02			No		
Acetic Acid	64-19-7	3.42E-03	8.22E-02	3.00E+01	0.96			No		
Benzene	71-73-2	1.50E-01	3.38E+00	8.78E+01			8.1			Yes
Benzo(a)pyrene	50-32-8	3.46E-06	1.42E-05	6.96E-03			2.2			No
Chlorine	7782-50-5	3.38E-02	8.10E-01	2.96E+02	0.23	0.79		No	Yes	
Formaldehyde	50-00-0	7.41E-02	1.76E+00	3.38E+02	0.04			Yes		
n-Hexane	110-54-3	7.02E-01	1.69E+01	5.95E+03		23			No	
Phenol	108-95-2	1.33E+00	3.18E+01	3.18E+01	0.24			Yes		
Sulfuric Acid	7664-93-9	1.28E+00	3.06E+01	1.12E+04	0.025	0.25		Yes	Yes	
1,1,1-Trichloroethane (Methyl Chloroform)	71-55-6	4.94E-06	1.18E-04	5.66E-06		250			No	
Toluene	108-88-3	1.62E-02	3.14E-01	3.95E+01	14.4	98		No	No	
Xylene	1330-20-7	2.28E-04	5.47E-03	5.23E-01	16.4	57		No	No	
Arsenic		1.17E-03	2.81E-02	3.07E+00			0.016			Yes
Beryllium	7440-41-7	8.78E-04	2.11E-02	2.04E+00			0.28			Yes
Cadmium	7440-43-9	9.48E-04	2.28E-02	4.72E+00			0.37			Yes
Soluble Chromium Compounds		9.84E-04	2.36E-02	5.60E+00		0.013			Yes	
Manganese	7439-96-5	1.76E-03	4.22E-02	4.75E+00		0.63			No	
Mercury	7439-97-6	8.78E-04	2.11E-02	2.51E+00		0.013			Yes	
Nickel	7440-02-0	1.07E-03	2.56E-02	7.65E+00		0.13			No	

² Table from February 6, 2015 addendum to Permit Application No. 6500303.14C

Table 7. Emission Rate Limits to be Added to the Permit

ID No.	Emissions Sources	Toxic Air Pollutant	Emission Limits
FU-751R1	PPS process sources controlled by thermal oxidizer	Hydrogen chloride	75.3 pounds per hour
		Chlorine	103 pounds per hour
		Sulfuric acid	32.7 pounds per hour
TODIVERT	PPS process sources diverting the thermal oxidizer	Hydrogen sulfide	1.18 pounds per hour
TA-161R1	HCL Storage Tank + Fugitives	Hydrogen chloride	3.47 pounds per hour
MA-741R1	Salt press	Hydrogen sulfide	0.133 pounds per hour
MA-2741	Salt press	Hydrogen sulfide	0.133 pounds per hour

VIII. Facility Emissions Review

The following table shows potential and actual facility wide emissions. Potential emissions are taken from the Permit Application No. 6500303.14C as presented in the revisions to emissions supplied by Fortron on February 6, 2015. Actual emissions have been obtained from the 2013 air emissions inventory.

Table 8. New Potential Emissions vs. Actual 2013 Emissions

Pollutant	Potential Emissions after controls/limits (tpy)	2013 Actual Emissions From Air Emissions Inventory (tpy)^a
PM	29.98	9.13
PM ₁₀	28.31	8.09
PM _{2.5}	28.31	8.09
SO ₂	105.09	40.59
NO _x	110.37	12.30
VOC	114.23	20.84
CO	96.85	9.97
CO _{2e}	163,982	19,624.98
HAPs	60.4	17.99

^aSee Table of Emissions on cover page of this review.

IX. Facility Compliance Status

The last full inspection of this facility was completed on September 19, 2014 by Mark Hedrick of the Wilmington Regional Office (WiRO). At this time, the facility “appeared to be in compliance with all permitting requirements.”

X. Permit Review

On March 16, 2015, a final draft version of Permit No. 07323T20 and the associated review document were sent to Mr. Fred Samz of Fortron Industries and Mr. Mark Hedrick, WiRO for their review and comments. Fortron provided comments on March 24, 2015 which have been incorporated into the permit. No comments were received from WiRO.

XI. Public Notice and Comments

Public notice not required at this time. This permit action is for the first step of a two-step process as per 15A NCAC 2Q .0501(c)(2).

XII. Recommendation

The Title V Permit application for Fortron Industries LLC, located in Wilmington, North Carolina has been reviewed by NC DAQ to determine compliance with all applicable procedures and requirements. NC DAQ has determined that this facility is complying or will achieve compliance with all applicable requirements as specified in the draft Permit No. 07323T20.

NC DAQ recommends issuance of the modified air permit No. **07323T20**.